

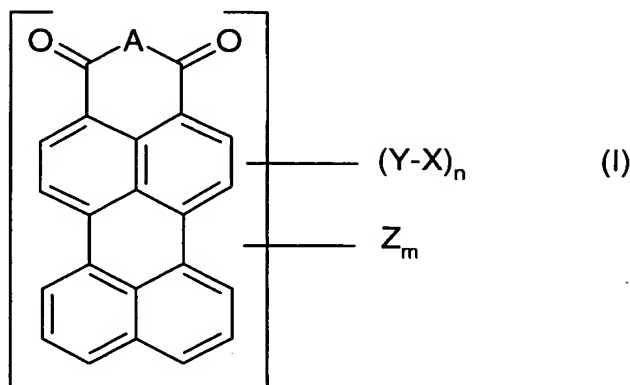
BASF Aktiengesellschaft

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Claims

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1. A perylene derivative of the formula (I)



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where

A has the definition O, CH₂ or NR¹ with R¹ being H, aryl, aralkyl, heteroaryl, cycloalkyl, C₁-C₂₂ alkyl,

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Y, each identical or different, is -CO₂, -CONR², -SO₃ or -SO₂NR², R² being H, aryl, aralkyl, heteroaryl, cycloalkyl, C₁-C₂₂ alkyl, preferably C₁-C₆ alkyl, alkylamine, in which the amine function may if desired carry one or more further substituents and may be part of a polyamine,

X, each identical or different, is a predominantly sterically stabilizing and/or electrostatically stabilizing substituent,

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Z, each identical or different, represents where present one or more further substituents, selected from the group consisting of alkyl, alkoxy, and aryloxy groups and halogens, especially chlorine and bromine,

n is an integral number greater than or equal to 1, and

m is an integral number greater than or equal to 0.

- 2 -

2. A perylene derivative as claimed in claim 1, wherein the sterically stabilizing substituents are selected from the group consisting of polymers based on alkylene oxides, polymers based on polyesters, polymers based on polyacrylates, polymers based on alkyl sulfides, and polymers based on alkyl compounds.

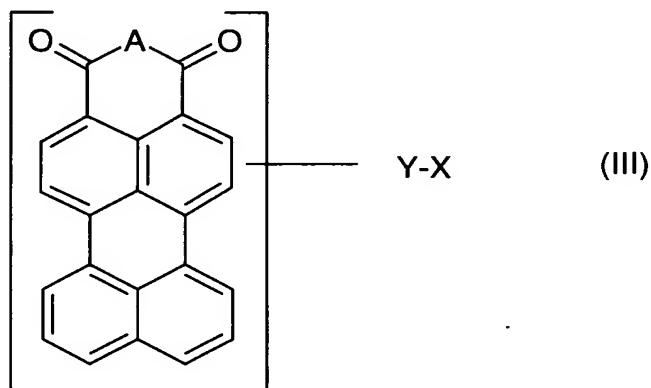
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3. A perylene derivative as claimed in claim 2, wherein the polymers are block (co)polymers.

4. A perylene derivative as claimed in claim 1, wherein the electrostatically stabilizing radicals contain ammonium groups and/or optionally protonatable amino groups.

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5. A perylene derivative as claimed in claim 1, wherein in the formula (I) $n = 1$ and $m = 0$ and the perylene derivative is of the formula (III)



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where in the formula (III)

A is NH,

Y is $-\text{CONH}$, $-\text{SO}_3$ or $-\text{SO}_2\text{NH}$,

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X is a substituent which includes a protonatable amino group, preferably a

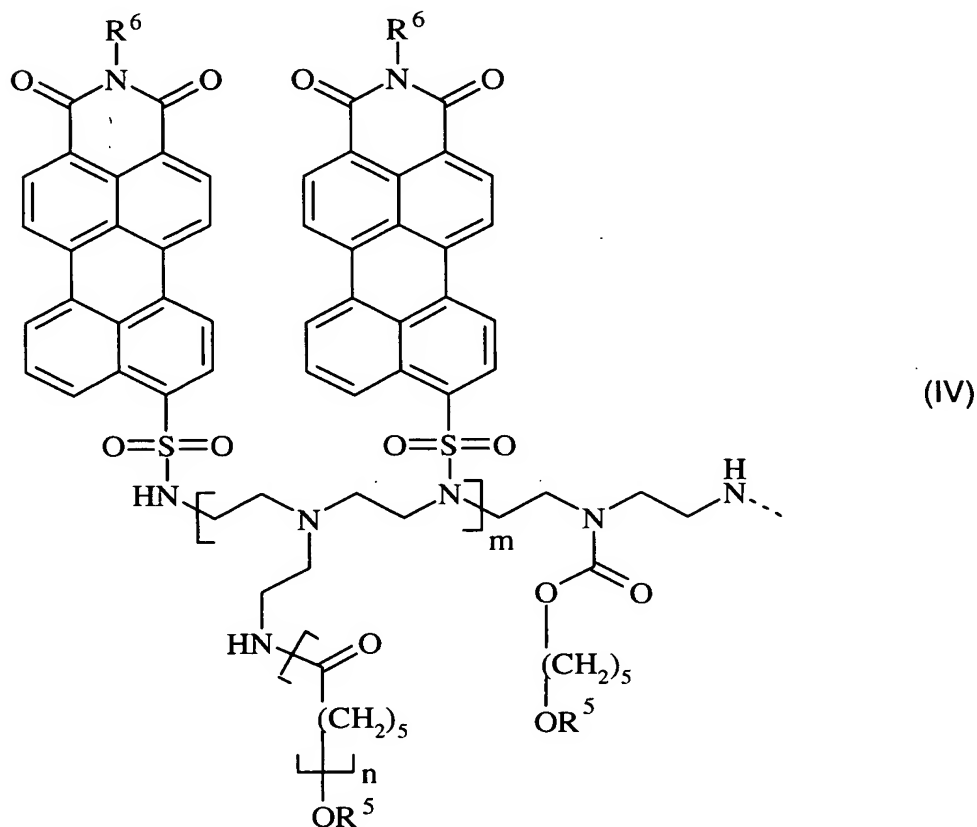
C_1 to C_{22} alkylamine, it being possible for the nitrogen atom of the amine function to be substituted by further alkyl groups and to be part of a polyamine, or is part of a ring system,

- 3 -

or

X is C₁-C₃₀ alkyl or C₃-C₃₀ alkenyl, it being possible for the carbon chain to be interrupted in each case by one or more groups -O-, -CO-O-, -O-CO- or -S- and each of which may be substituted by C₁-C₆ alkoxy, amino, hydroxyl, carboxyl groups and halogens, where R⁴ is H, alkyl, cycloalkyl, aryl, heteroaryl or aralkyl.

6. A perylene derivative of the formula (IV)



in which

m is an integral number from 1 to 100,

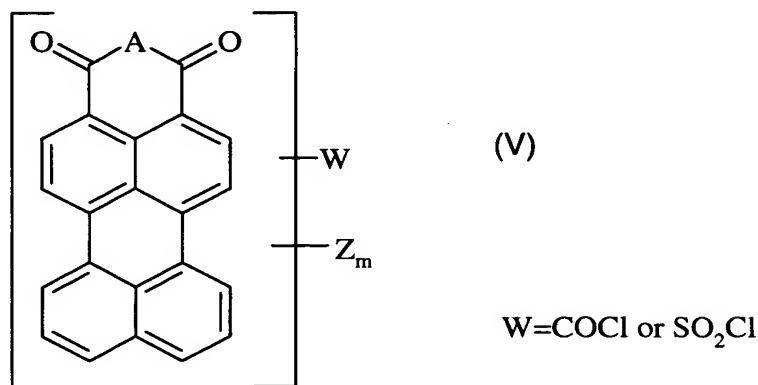
n is an integral number from 1 to 20,

R⁵ is C₁₋₆₄-alkyl-SO₂, and

R⁶ is H or C₁-C₆ alkyl, preferably H or CH₃, more preferably H.

- 4 -

7. A process for preparing a perylene derivative as claimed in claim 1, wherein a COCl- and/or SO₂Cl-substituted perylene derivative of the formula (V)



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in which A is O, CH₂ or NR¹ with R¹ being H, aryl, aralkyl, heteroaryl, cycloalkyl, C₁ to C₂₂ alkyl,

10 Z, each identical or different, is where present one or more further substituents, selected from the group consisting of alkyl, alkoxy, and aryloxy groups and halogens, especially chlorine or bromine, and

m is an integral number greater than or equal to 0

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is reacted with alcohols, thiols and/or amines.

8. A perylene derivative as claimed in claim 1, obtainable by a process as claimed in claim 7.

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9. A pigment preparation comprising

(a) at least one organic pigment and

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(b) at least one compound composed of a parent structure and at least one substituent covalently bonded to said structure,

the structure being a polycyclic, substantially aromatic hydrocarbon and being selected in particular from the group consisting of naphthalene derivatives,

- 5 -

phenalene derivatives, perylene derivatives, pyrene derivatives, fluoranthene derivatives, fluorene derivatives, heptalene derivatives, indene derivatives, phenanthrene derivatives, anthracenyl derivatives, and acenaphthene derivatives, and

the substituent or substituents being able to exert a sterically and/or electrostatically stabilizing effect on a pigment;

as pigment dispersant.

10. A pigment preparation as claimed in claim 9, wherein the pigment preparation comprises at least one perylene derivative as claimed in any of claims 1 to 6 and 8 as pigment dispersant.

11. A pigment preparation as claimed in claim 9, wherein the pigment preparation contains from 2 to 50% by weight, preferably from 2 to 30% by weight, more preferably from 2 to 20% by weight of pigment dispersant per g of pigment in the case of the sterically stabilizing radicals and from 0.5 to 5% by weight, preferably from 0.5 to 4% by weight, more preferably from 0.5 to 3% by weight of pigment dispersant per g of pigment in the case of the electrostatically stabilizing radicals.

12. A pigment preparation as claimed in claim 9, wherein the pigments are finely divided and have an average primary particle size of less than 300 nm, preferably less than 200 nm, more preferably less than 100 nm, and can be used for producing transparent colors.

13. A process for preparing a pigment preparation as claimed in claim 9, which comprises mixing at least one compound, as pigment dispersant,

- which is composed of a parent structure and at least one substituent covalently bonded to said structure,

- the parent structure being a polycyclic, substantially aromatic hydrocarbon and being selected in particular from the group consisting of naphthalene derivatives, phenalene derivatives, perylene derivatives, pyrene derivatives,

- 6 -

fluoranthene derivatives, fluorene derivatives, heptalene derivatives, indene derivatives, phenanthrene derivatives, anthracenyl derivatives, and acenaphthene derivatives, and

5 - it being possible for the substituent or substituents to exert a sterically and/or electrostatically stabilizing effect on a pigment

and the organic pigment or allowing them to act on one another at any desired point in time during the operation of preparing them.

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14. A process as claimed in claim 13, wherein a perylene derivative as claimed in claim 1 is used as pigment dispersant.

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15. A process as claimed in claim 14, wherein the pigment dispersant and the organic pigment are mixed with one another in the form of dry powders.

16. A pigment dispersion, in particular a varnish or paint, comprising at least one perylene derivative as claimed in claim 1.

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17. A pigment dispersion, in particular a varnish or paint, comprising at least one pigment preparation as claimed in claim 9.